At the same time the use of chemical fertilisers and the improvement of the drainage system raised the average yield per feddan. Between 1932 and 1939 the yield of all crops showed a distinct tendency to rise, only to fall again sharply in 1941, after imports of fertilisers had been drastically cut down.

Again, although the area actually cultivated averaged only 5,353,500 feddans between 1930 and 1940, there are in all 7,100,000 feddans which are classed as cultivable. The surplus of 1,750,000 feddans consists largely, no doubt, of inferior land, but if energetic measures were taken a great deal of it could be worked economically. Even should the limit be reached there still remains the Sudan. This vast and under-populated country is really an extension of Upper Egypt, which it resembles.

If present trends continue, however, these favourable factors are likely soon to be neutralised by the constant increase of the fellah population. Although the birthrate shows a tendency to fall, the gross rate of increase rose from an average of 168,000 a year between 1927 and 1937 to about 250,000 a year between 1937 and 1941.

Year	Population	Increase	Percentage Increase	Mean Annual Percentage Increase
1897	9,714,525	2,910,504	—	—
1907	11,287,359	1,572,834	16,2	1,62
1917	12,750,918	1,463,559	13,0	1,3
1927	14,217,864	1,466,946	11,5	1,25
1937	15.932,694	1,714,830	12,1	1,21

It is clear that sooner or later, if the present standard of living of the fellaheen is to be maintained, let alone raised, the problem of over-population will become acute. The palliatives we have mentioned will not suffice for long. More drastic measures will have to be taken : on the one hand the industrialisation of the country, to create a better balance between industry and agriculture and to raise the general level of production ; and on the other hand a policy of reallotment of land, permitting more intensive cultivation by smallholders, and better distribution of the products. The consideration of such remedies, however, lies beyond the scope of this book.

241 312 wheel carrying a long chain of pots which move mouth downward into the water to fill, and then tip out their water into the channel as they arrive at the top. The *saqia* and the Archimedean screw have been continuously in use since the times of the Ptolemies.

[471 476] A *saqia*, costing as it does from L.E. 10 to L.E. 20, according to its depth, is often the common property of several families. Each family in turn brings its own beast to draw water, and the work goes on without any break. One feddan can be irrigated in this way in 24 hours, and one *saqia* can supply five feddans.

The fellah's task is to goad the animal, to watch the turning of the wheel and the flow of water, and to avoid wastage on the way to the field, which may be anything up to three furlongs away. Usually an old man or a child is [887 857] left in charge, and as the ungreased wheels continue their ceaseless groaning, the child hums for joy at every movement he makes.

The *saqia*, with variations such as the *taboot* or waterwheel, is found in its thousands all over Egypt. Under the name of *noria* it is used by peasants in Syria, North Africa, Spain, Italy and Greece.

It is clear that the business of watering makes very great demands on the fellah's energy and endurance. Yet he is not satisfied with the strict minimum, and is often accused of giving the soil too much water.

● [242] He does not understand that frequent and copious watering raises the underground water-level, and that when this reaches four feet below the surface it stifles the roots and makes the plants turn yellow. He only knows the evil effects of drought. So when his turn comes he never wastes a moment, but gives his crop as much water as he can. To him, lack of water means a failure or at least a low crop; and that means poverty. There is no question that innumerable troubles and anxieties beset the fellah in his efforts to get the water which he needs for his little plot. The overseers of irrigation in the provinces and the watchmen whose [656] duty it is to see to the opening of sluices often disregard the orders and regulations which assure a just supply. In this matter favouritism, injustice and even personal spite are often indulged in with impunity.

MANURING

Watering is not enough; the soil needs nourishment to make it productive. The fellah knows only too well that the fertilising powers of the soil must be revived. Together with his wife and children he does his best to find, at as little expense as possible, as much animal or chemical manure as he can.

Pigeon droppings, silt cleaned out of canals and mixed with grass, and, above all, soil impregnated with stable-dung (*sebâkh bàladi*), (but never human excrement), village débris and age-old dust, all contribute nitrogen to his field. The rubbish mounds (*koms*) of dead cities become quarries to which the fellah turns for his manure. This *sebakh kufri*, as it is called, is found in varying qualities all over Egypt; but nowadays most of what is left is of poor quality.

In the cliffs of Upper Egypt there is also a kind of sand (*marog*) and a clay (*tafla*) which serve as a poor manure, and need much labour to bring to the fields. But all these manures are lacking in salt content. The used-up soil needs artificial remedies. Despite the fellah's hidebound methods his sympathy with the soil has helped him to understand its need. Since the early years of this century, good *sebâkh kufri* having become almost unobtainable, he has begun to use chemical manures (*semàd*). Before the present war (1939), Egypt used to import more than half a million tons of natural nitrates from Chile, the earliest known source, and synthetic nitrates from Germany and England. These may be used on all except leguminous crops (berseem, fenugreek, and beans), which need phosphates.

The distribution of *semàd* is most efficiently organised by the *Crédit Agricole d'Egypte*, which sells it by the sack on credit, and also by the Royal Agricultural Society and the big import firms. There are about 2,000 depots spread all over the country. The chief customers are the big landowners and the State Domains, which advance to the owners and tenant farmers the amount required for each holding against part of the crop. Before the war a sack of 100 kilograms, delivered to the village, used to cost from 65 to 70 piastres. Corn crops require the most expensive fertilisers, but the cheapest qualities are good enough for *berseem*.

241 This 'leaven of the land' has still to be put to the soil.
242 Twenty times a day the donkey, laden with great panniers
292 or sacks and driven by the fellah's son, carries the manure
293 to the field and goes back to reload. There are no carts or barrows for this work, and the distances are often great. The farmer lays down the manure generously, whether it be natural humus or chemical fertiliser, and packs it by hand round the plant to be encouraged.

Getting in the Crops

461 All this attention is paid to the soil in order that it may yield its fruits. It follows that the fellah's work must continue from seed-time till harvest. The days are gone when he could go away after sowing and return in a few months' time to gather the crop. The struggle for life has become continuous and unrelenting. Since the introduction of cotton and the establishment of perennial irrigation, the fellah has no slack season and is always tending some crop or other.

241 The crops follow a system of rotation covering a period
805 of two or three years. Taking cotton first, the succession
221 will be as follows:

February-October	Cotton
November-May	Wheat, berseem or barley
May-June	(Partly fallow)
June-November	Maize or rice
December-February	Berseem
April-October	Cotton
November-May	Winter cereals or berseem
May-November	Maize (or fallow)
November-March	Berseem or winter cereals
March-June	(Partly fallow)
June-October	Maize or rice
November-March	Berseem

This calendar of crop rotation is observed with but little variation everywhere in the country, according to the need and experience of the farmer. I have translated it into Gregorian months; but the fellaheen keep to the Coptic Calendar, which is based on the Nile flood and goes back to ancient times. It begins with the month of *Tût* (September), in which the Nile reaches its highest level, and divides the solar year into twelve months. There is a series of Arabic
[538] proverbs deriving originally from Pharaonic Egypt, which

243 weeks later the stalks stand higher than a man and are laden with heavy ears. It is time for harvesting. The workers, mainly women and children, pile the stalks into heaps, and then make a first sorting, throwing on one side the ears of maize, on the other the stripped stalks. The yield of a maize crop may be ten or twelve *ardebs* to the feddan, but the average for the country is seven and a half.

The stalks are now set up on end and intertwined to make a sort of circular hedge round the heaps of ears. In this open enclosure the fellaheen work day and night to strip the ears and break out the yellow grain, bigger than peas, [342 372] which they put into baskets and carry home. The stalks are also taken home on donkey back to serve as fuel or reinforcement for the roof. Nothing must be wasted.

C. Wheat

Wheat, on the other hand, has been since antiquity a traditional Egyptian crop. It is nowadays regaining some of the importance which it lost earlier to cotton, and is benefiting from the recent tendency towards greater variety of crops. In 1934 1,388,673 feddans were sown. In 1939 the area had increased to 1,466,000 feddans, which gave a total yield of 8,600,000 ardebs, or an average of 5.96 per feddan.

[262 439] Almost all the wheat is consumed in Epgyt, by middle-class Egyptians and the people in the towns. Owing to its low percentage of gluten and record earth-content it is barely exportable, though in 1937 Germany was negotiating purchases. Europeans and rich Egyptians prefer foreign flour, mostly imported from Australia or Canada.

The fellah sows his wheat in November. He pays great [312 242] attention to manuring and watering up to the period of the *gaffaf*, after which he waters it only once or twice more before harvest. He harvests in April, with a primitive sickle or by hand. The crop is bound into sheaves and carried on donkey- [492] or camel-back to the communal threshing-floor, where it is untied.

Each family in turn spreads out its crop. The *gamoossa* is brought to tread out the ears of corn spread over the ground. The poorest of the fellaheen beat their corn with [407] their staves (*nabbuts*). More often several of them share a

243 Northern Delta. It occupies about 6% of the cultivated area, but its acreage depends on the height of the Nile flood, and is controlled by the Government. Thus in 1935 there were 470,375 feddans under rice, in 1937 only 240,469, and in 1939 476,454. The rice is of good quality and can be exported.

241 [262 252] Beans (*fûl*) provide fodder for draught animals, from June to December; those of the best quality, prepared with oil or fat, make a rich and popular dish.

Onions and sugar-cane are grown in Upper Egypt.

Then there are barley, lentils and dates, not to mention vegetables and fruits, the cultivation of which, although confined to certain localities, increases year by year.

The fellah keeps a narrow strip or corner of his field for his own use. Here, without using any manure, he plants the vegetables appropriate to each season: *bamia* in winter, *fûl* in spring and *molokhiya* in summer. These will be mentioned again in the chapter on the fellah's food. Apart from occupying much less space than other crops, they are cultivated in much the same way as the rest.

241 463 181 Egypt is becoming a land of variety in crops, but this diversity has not involved any sort of specialisation for the fellah. He is still a manual labourer, a "Jack of all trades", and his work remains simple and monotonous. There is not enough differentiation to form specialists of any kind, nor enough uniformity to limit his work to one dull task. This means that the fellah can adapt himself to any new crop. He will never introduce a novelty himself, but will take to it if encouraged by authority, the more readily if experience proves it to pay. This has been noticeable in the case of flax.

177 ● 242 407 Mechanical innovations, however, are a very different matter. The preceding pages will have made it clear that there is never any question of tractors, reapers or binders, let alone winnowing or threshing machines, or even cars and waggons. Such machines as these are scarcely more common today than in the past. The fellah is too poor to use them, and in any case he feels no need for any instrument which would divide him from the soil. It is true that the large estates under direct cultivation employ extremely modern machinery, which is handled by fellaheen, but this is an

exception. The fellaheen as a whole use no machinery at all. This is probably due less to habit or ignorance than to an instinct for self-preservation. If machinery is not more commonly used in Egyptian farming, the reason is that the owners find man-power more economical. For the moment the two points of view coincide. But it will not always be so. One day the fellaheen will increase their demands, and machines will become more profitable to the landowners. Manual labour should keep its leading place, however, for to mechanise labour in the Nile Valley would be to destroy the organic relationship which has grown up between the cultivators and their soil, and overthrow a balance now preserved by methods of labour appropriate to an abundant population.

2. Conditions of Work

To this soil the fellah devotes all his energies. He gives himself to it without reserve, even passionately when it is his own. But that is very rare. Here man belongs to the land, not the land to him. This is the true cause of both his lethargy and his poverty. None of the conditions under which he may labour make for freedom. Let us look in turn at each of the varying conditions which obtain today.

The Fellah as Forced Labourer

The *corvée* was suppressed in 1893, but continues to be legally applied in certain cases of public necessity. Then the fellah is mobilised by authority, torn from his field and his village, and sent to the spot where his services are needed.

It may be that the Nile flood threatens catastrophe. On such occasions hundreds of thousands of fellaheen are set to work day and night under the rod of officials and overseers to raise the embankments, build dykes, deal with any escape and watch the barrages.

Suppose a dyke is on the point of breaking. The fellaheen rush in a compact mass to the point of danger, each with his *fass* and basket. They heighten the dyke and buttress it with a great rampart composed of earth, rushes, palm-trunks, and — if need be — maize-stalks and sugar-cane.

In 1934 they saved the country by such efforts. The Government set aside L.E. 150,000 to fight the danger;